Targeted therapy aims to inhibit activity of mutated proteins that stimulate signal transduction in the tumor cell. Malignant melanoma (MM) belongs to one of most malignant cancer resistant to conventional treatment, so the current approach in the treatment of metastatic melanoma is targeted therapy. The therapy prolongs the life span of patients with MM by maximal 5 years because of developing of the drug resistance in patients. Therefore new or additional molecular targets in melanoma are still under investigation.

In the current project we plan to verify if kinase RIPK4 can serve as such aim. This kinase is involved in many different signaling pathways including Wnt/ β-catenin which are important for melanoma biology. The role of RIPK4 in melanoma remain unknown. Therefore we are going to determine the level of RIPK4 in melanoma on clinical samples. We want to use established melanoma cell line in which we will diminish the level of RIKP4 and exam if expression of the proteins involved in Wnt/β signaling pathway differs between cells with diminished level of RIPK4 and control cells. We plan to study invasiveness of cells with various level of RIPK4 in an animal model by comparison of tumour growth and metastasis. We would like to publish the obtained results in a high impact international journal. The study may serve as a basis for further research on the possibility to use RIP4 kinase for melanoma therapy.